



Master of Science in Computer Science 9-Course Program Requirements

9 Classes (5 Core + 4 Elective) + 2 Immersion (if needed)

Placement Exams & Immersion Courses

Choose 1:

- ☐ **MPCS Programming Placement Exam** or
- ☐ **MPCS 50101 Concepts of Programming (Immersion Programming)**

Choose 1:

- ☐ **Discrete Math Placement Exam** or
- ☐ **MPCS 50103 Discrete Math (Immersion Math)**

Immersion classes are in addition to the 9 degree required courses. Students have the choice to take immersion classes or take the placement exams.

Core Courses

Programming Choose 1

- ☐ **Java Programming***
- ☐ **Python Programming***

*Students taking MPCS 50101 Concepts of Programming (Immersion Programming) must enroll in Java or Python.

- ☐ **Advanced Programming****
- ☐ **C Programming****
- ☐ **Intermediate Python Programming****

**Advanced programming classes are only available through the MPCS Programming Placement Exams.

Only one core programming class is allowed. Additional programming classes cannot be taken as electives.

All core programming classes are offered in the Autumn quarter. Only Python Programming is offered in the Winter quarter.

Theory Choose 1

- ☐ **Algorithms**
- ☐ **Intermediate Algorithms**
- ☐ **Advanced Algorithms**
- ☐ **Topics in Algorithmic Game Theory**

Intermediate Algorithms requires a previous algorithms class.

Advanced Algorithms and Topics in Algorithmic Game Theory can be taken as electives after the core theory requirement is fulfilled.

Systems Choose 3

- ☐ **Advanced Computer Architecture**
- ☐ **Advanced Computer Systems**
- ☐ **Compilers**
- ☐ **Databases**
- ☐ **Distributed Systems**
- ☐ **Functional Programming**
- ☐ **GPU Programming**
- ☐ **Intro to Computer Security**
- ☐ **Intro to Computer Systems**
- ☐ **Intro to Unix Systems**
- ☐ **Networks**
- ☐ **Operating Systems**
- ☐ **Parallel Programming**

Additional core systems classes can be taken as electives after the core systems requirement is fulfilled.

Electives Courses

Choose 4

- ☐ **Advanced C++**
- ☐ **Advanced Data Analytics**
- ☐ **Advanced iOS**
- ☐ **Advanced Topics in Cloud Computing**
- ☐ **Advanced UI/UX**
- ☐ **Android Application Development**
- ☐ **App Development Capstone**
- ☐ **Applied Data Analysis**
- ☐ **Applied Financial Technology**
- ☐ **Applied Software Engineering**
- ☐ **Big Data App Architecture**

- ☐ **C++ for Advanced Programmers**
- ☐ **Cloud Computing**
- ☐ **Entrepreneurship in Technology**
- ☐ **Foundations of Computational Data Analysis**
- ☐ **Full Stack Software Engineering**
- ☐ **Generative AI**
- ☐ **High Performance Computing**
- ☐ **Human-Computer Interaction**
- ☐ **Intro to Blockchain**
- ☐ **Intro to Scientific Computing**
- ☐ **Intro to Software Engineering**
- ☐ **iOS Application Development**
- ☐ **Machine Learning**
- ☐ **MPCS Practicum**

- ☐ **Natural Language Processing**
- ☐ **OO Architecture**
- ☐ **OO Programming**
- ☐ **Product Management**
- ☐ **Software Quality Assurance**
- ☐ **Time Series Analysis and Stochastic Processes**
- ☐ **Topics/Software Engineering**
- ☐ **Topics/Software: Making an Impact**
- ☐ **UI/UX Design**
- ☐ **Web Development**

Elective classes can be taken after three core classes are completed or concurrent with the third core class.

Check course prerequisites for eligibility.

Sample Course Plans (Part-Time)

Part-time students should plan to take 1-2 courses per quarter. Course plans are flexible depending on the start quarter and results of placement exams. Part-time students do not have a registration requirement in every quarter, summer quarter is online and always optional. Students should plan to meet with an academic advisor in the MPCS to develop a course plan for their time in the program.

Sample Course Plan: **For students with a background in programming and Discrete Math***

Academic Year	Autumn	Winter	Spring	Summer
1	Core Programming Core Systems	Algorithms Core Systems	Core Systems Elective	Elective
2	Elective Elective			

*Requires MPCS Programming and Math placement exams.

Sample Course Plan: **For students with a programming background, Discrete Math needed.**

Academic Year	Autumn	Winter	Spring	Summer
1	Core Programming Discrete Math	Core Systems Algorithms	Core Systems Elective	Elective
2	Core Systems Elective	Elective		

*Requires MPCS Programming placement exam.

Sample Course Plan: **One course per quarter, Immersion courses needed.**

Academic Year	Autumn	Winter	Spring	Summer
1	Concepts of Programming	Core Programming	Core Systems	Discrete Math
2	Algorithms	Core Systems	Elective	
3	Core Systems	Elective	Elective	

Sample Course Plan: **Summer start, Immersion courses needed.**

Academic Year	Summer (online courses)	Autumn	Winter	Spring
1	Concepts of Programming	Core Programming Discrete Math	Algorithms	Core Systems Elective
2		Core Systems Elective	Core Systems Elective	Elective

See course schedule for current offerings
and course details:
mpcs-courses.cs.uchicago.edu



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